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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,671	07/30/2003	Hee Bok Kang	40296-0005	6501
26633	7590	04/13/2005	EXAMINER	
HELLER EHRMAN WHITE & MCAULIFFE LLP 1717 RHODE ISLAND AVE, NW WASHINGTON, DC 20036-3001			NGUYEN, VAN THU T	
			ART UNIT	PAPER NUMBER
			2824	

DATE MAILED: 04/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/629,671	<b>Applicant(s)</b> KANG, HEE BOK	
	<b>Examiner</b> VanThu Nguyen	<b>Art Unit</b> 2824	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 6-9, 13, 18 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-9, 18 and 20 is/are allowed.
- 6) ☒ Claim(s) 13 is/are rejected.
- 7) ☒ Claim(s) 21 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Amendment***

1. Acknowledgement is made for Amendment filed on February 28, 2005.
2. Claims 6-9, 13, 18, 20-22 are pending.
3. Claims 1-5, 10-12, 14-17, 19 are cancelled.
4. Claims 20-22 are newly added.

***Response to Arguments***

5. Applicant's arguments with respect to claim 13 have been considered but are moot in view of the new ground(s) of rejection with new cited reference Kasai et al. (U.S. Patent No. 6,600,674).
6. Claims 15-16 are previously allowed in Office Action filed December 1, 2004, however, Applicant has cancelled these claims in Amendment filed on February 28, 2005.

***Claim Objections***

7. Claims 21-22 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 21-22 do not further limit the claimed memory device in claims 6-7, respectively.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Boler et al. further in view of Kasai (U.S. Patent No. 6,775,172)

Regarding claim 13, Wang discloses, in FIG. 3, a memory device comprising:

a switch array (32, 34,42) comprising an inherent plurality of first switches (42) for connecting a lower byte region of data lines (16a2 or 16b2) to a lower byte region of a memory array (via 24b), an inherent plurality of second switches (34) for connecting the lower byte region of the data lines (via 16a2 or 16b2) to an upper byte region of the memory array (via 24a), and a plurality of inherent third switches (32) for connecting an upper byte region of a data lines (16a1 or 16b1) to the upper byte region of the memory array (via 24a);

and a switch controller (38, 40, 46, 48) for receiving external control signals (16/8, MSB Add) to control activation of the data lines and on/off operations of the first through the third switches.

(See column 3, line 37 to column 5 line 47).

However, Wang does not disclose that the switches are connected through sense amplifiers and I/O buffers; and the memory device being a ferroelectric memory device having a bitline structure comprising a main bitline and a plurality of sub bitlines.

Boler et al. disclose, in FIG. 1A, each bit outputted from the memory array via a sense amplifier (24), and output to a data line via a data I/O buffer (26).

Kasai discloses, in FIG. 7, a ferroelectric memory device having a bitline structure comprising a main bitline (GBL0, GBL1) and a plurality of sub bitlines (BLA0, BLA1 ...) (see column 15, line 35 to column 16, line 43)

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Since Wang, Boler et al., and Kasai are all from the same field of endeavor, the purpose disclosed by Boler et al. and Kasai would have been recognized in the pertinent art of Wang.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to realize that sense amplifiers and data I/O buffers are essential components in a memory device (motivation to combine Wang and Boler et al.); and that the method disclosed in Wang can be applied to all types of memory, and the ferroelectric memory device disclosed in Kasai is not an exceptional of use (motivation to combine Wang and Kasai)

***Allowable Subject Matter***

10. Claims 6-9, 18, 20 are allowed with allowable subject matters indicated in prior Office Action, dated December 01, 2004.

***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VanThu Nguyen whose telephone number is (571) 272-1881.

The examiner can normally be reached on Monday-Friday, 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 4, 2005



VanThu Nguyen  
Primary Examiner  
Art Unit 2824